

# **REDESCRIPTION OF *Latrodectus geometricus* Koch, 1841 (ARANEAE: THERIDIIDAE) WITH A NEW RECORD OF MALE FROM MUMBAI (INDIA)**

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## **ABSTRACT**

The male and female of brown widow spider, *Latrodectus geometricus* C. L. Koch is reported from the Mumbai region which is redescribed. Male of *L. geometricus* is being reported for the first time from India.

**Key Words:** Araneae, Theridiidae, *Latrodectus geometricus*, New occurrence, Mumbai.

## **INTRODUCTION**

The brown widow spider, *Latrodectus geometricus* C.L.Koch, 1841 is a cosmopolitan tropical and subtropical spider having established populations in Hawaii, Florida, some Caribbean Islands, parts of Australia, South Africa, India, Japan, and Cyprus. *L.geometricus* C. L. Koch, 1841 (brown widow) is found around man-made habitats (Levy 1998; Knoflach & vanHarten 2002). The genus *Latrodectus* Walckenaer 1805 has 31 described species worldwide (WSC, 2015). From India only four species of *Latrodectus* are recorded till date and they are *elegans* Thorell, 1898; *erythromelas* Schmidt & Klaas, 1991; *geometricus* C. L. Koch, 1841 and *hasselti* Thorell, 1870. Earlier female of *L. geometricus* was reported from 20 km southwest of Pune city (18°22'N, 73°46'E), at an elevation of 800 m from msl on 29 August 2004 by Shantanu Shukla (Shukla, & Broome, 2007). The present paper describes both male and female of *L. geometricus* collected from Dahisar (Mumbai) (19°14'42.8"N 72°51'46.5"E) during January, 2015. Thus male of *L. geometricus* is being reported for the first time from India.

## **MATERIALS AND METHODS**

Two adult female *L. geometricus* and one adult male spiders were collected by hands from building corners and under vehicles and were photographed in laboratory. Morphological characters were noted, and leg measurements were taken in mm. Male palp was made transparent with 10% KOH, Epigyne of female was dissected, made transparent in 10% KOH, cleared in clove oil and photographed. All the specimens were preserved in 80% ethanol.

All specimens examined were deposited in the repository of the Bombay Natural History Society, Mumbai.

## **Taxonomy**

**Family:** Theridiidae Sundevall, 1833

**Genus:** *Latrodectus* Walckenaer 1805

***Latrodectus geometricus* C. L. Koch, 1841**

(Figures 1-8)

**Synonyms:** *Theridium zickzack* Karsch, 1878b: 311, pl. 8, f. 1 (Df).

*Latrodectus concinnus* O. Pickard-Cambridge, 1904: 152, pl. 10, f. 3-4 (Dmf).

*Chacoca distincta* Badcock, 1932: 11, f. 7 (Df). Material Examined: Female

**Male *Latrodectus geometricus* C. L. Koch, 1841 (Fig. 4):**

**General Description:** TL: 2.63 mm, Prosoma: 1.3mm, Opisthosoma: 1.33mm; Small spider with shiny abdomen and black carapace, legs of moderate length, paler and with mild annulations .

**Cephalothorax.**-Dark, longer than wide, margins narrowly infuscated, a black band from the median fovea to the posterior pair of eyes. Sparsely covered with short fine setae. Median fovea a transverse recurved depression, clypeus small.

Eight eyes in two rows, both rows recurved, Anterior medians the largest, the remainder homogeneous. anterior medians located a diameter apart. Median posteriors a diameter apart and nearer to the posterior laterals than from each other. Laterals eyes raised on divergent tubercles.

Sternum longer than broad, nearly shield shaped, brown and lacking hairs, dark brown, with a longitudinal median light yellow band, posterior apex of sternum ends acutely beyond coxae of fourth legs. Maxillae long with broad base while tapering proximal region and presence of scopular hairs. Labium quite small, nearly triangular, brownish in shade. Chelicerae armed with a minute denticle on the distal end of their inner margin.

Legs are long, first pair of legs longer than the fourth pair, superior claws are toothed almost to apex. Leg formula: I, IV, II, III.

The palp shows a long and coiled embolus with four loops (Fig. 7).

**Abdomen:** Subglobose, dorsal surface without coarse bristles, dorsum shows a longitudinal dark band with lateral white spots, On either side of this line a further line of four black spots each situated at the end of vertical lateral tapering white band, these converging at posterior end of abdomen. Covered with long fine setae. Ventral surface of abdomen with a distinct hour-glass-shaped yellow marking just below the epigastric furrow.

**Diagnosis of male:** Male is recognized by the dorsal longitudinal dark band on the abdomen and by the long slender embolus with four loops.

**Female *Latrodectus geometricus* C. L. Koch, 1841 (Figures 1-2):**

Measurements: TL:8.64mm, Prosoma: Length 3.63mm, width 3.29; Opisthosoma: length 5.01 mm, width 4.88 mm and TL:7.49 mm Prosoma: 3.01mm, width 2.69; Opisthosoma: 4.48 mm, width 4.06 mm.

**General Description:** Small spider with shiny abdomen and brown carapace, legs of moderate length, paler and with mild annulations.

**Cephalothorax:** Carapace brown, longer than wide. Cephalic region less in area and highly elevated. Carapace covered with long, white hairs especially near the ocular region, fovea indistinct. Eight eyes, all eyes equal in size, paler in appearance, almost round. Clypeus elevated and placed away from anterior medians. Ocular quad nearly square with equally spaced medians, laterals placed close to each other. Sternum, nearly shield shaped, brown and lacking hairs, anteriorly straight while posteriorly tapering. Chelicerae, short, cheliceral furrow moderately developed, without any teeth. Fang long, transparent and is nearly equal to the length of the chelicerae. Maxillae small but long with broad base and tapering proximally having scopular hairs. Labium quite small, nearly triangular, brownish in shade, lacking hairs.

Legs, slender with pale and black coloration, three simple claws. Leg segments coxae, trochanter and femur are pale brown while other segments, dark. Legs decorated with pale and long spines.



**Figure 1 - *Latrodectus geometricus*, female habitus. Dorsal view**



**Figure 2 - *Latrodectus geometricus*, female habitus. Lateral view**



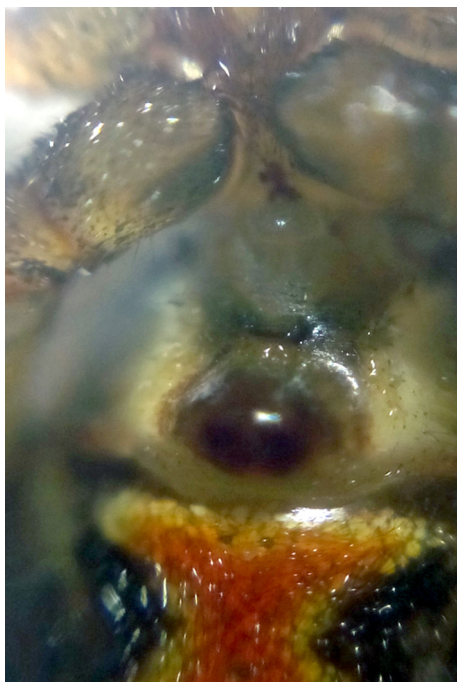


**Figure 3 - *Latrodectus geometricus* with prey (carpenter ant)**

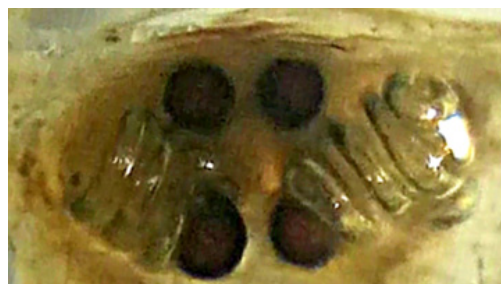


**Figure 4 - *Latrodectus geometricus*, Male habitus**





**Figure 5 - *Latrodectus geometricus*  
Epigyne, Ventral view**



**Figure 6 - *Latrodectus geometricus*  
Epigyne - Dorsal View**



**Figure 7 - *Latrodectus geometricus*  
Male Palp- Ventral view**



**Figure 8 - *Latrodectus geometricus* egg sacs**

Trichobothria present on metatarsus and tarsus segments. Leg formula- I, IV, II, III

**Abdomen** is globular and shiny tapering posteriorly, dorsum shows symmetrical markings which consist loop like brown spots encircled with white borders.

**Epigyne:**Dorsal lip projecting on each side, spermathecae dumbel shaped and almost parallel to each other, copulatory ducts highly coiled (Fig. 6).

**Natural history:** The specimen were collected from Dahisar (19°14'42.8"N 72°51'46.5"E)with pyramid shaped tangle webs constructed around building corners and under vehicles with a silken retreat placed near the top of the structure. Juveniles were observed constructing their webs in close proximity to adult spiders. Females were observed feeding on moths and carpenter ants (Fig.3). Female was found along with 4 off-white spherical egg sacs which were spiky in appearance.

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